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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/243,107	02/02/1999	JUDITH E. SCHWABE	08993/009001	2012
22434	7590 09/30/2002			
BEYER WEAVER & THOMAS LLP			. EXAMINER	
P.O. BOX 778 BERKELEY, CA 94704-0778		.5.	HO, THE T	
			ART UNIT	PAPER NUMBER
			2151	
			DATE MAILED: 09/30/2002	

Please find below and/or attached an Office communication concerning this application or proceeding.

The

	Application No.	Applicant(s)				
Office Antique O	09/243,107	SCHWABE ET AL.				
Office Action Summary	Examiner	Art Unit				
	The T. Ho	2151				
The MAILING DATE of this communication apperiod for Reply	pears on the cover sheet	with the correspondence address				
A SHORTENED STATUTORY PERIOD FOR REPL THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a rep If NO period for reply is specified above, the maximum statutory period Failure to reply within the set or extended period for reply will, by statute - Any reply received by the Office later than three months after the mailin earned patent term adjustment. See 37 CFR 1.704(b). Status	136(a). In no event, however, may ly within the statutory minimum of will apply and will expire SIX (6) No. cause the application to become	a reply be timely filed thirty (30) days will be considered timely. ONTHS from the mailing date of this communication. ABANDONED (35 U.S.C. § 133).				
1) Responsive to communication(s) filed on <u>02</u>	February 1999 .					
2a) This action is FINAL . 2b)⊠ Th	nis action is non-final.					
3) Since this application is in condition for allow	ance except for formal n	natters, prosecution as to the merits is				
closed in accordance with the practice under Disposition of Claims	Ex parte Quayle, 1935	C.D. 11, 453 O.G. 213.				
4)⊠ Claim(s) <u>1-30</u> is/are pending in the application	n.					
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-30</u> is/are rejected.						
7) Claim(s) is/are objected to.	') Claim(s) is/are objected to.					
8) Claim(s) are subject to restriction and/o	or election requirement.					
Application Papers						
9) The specification is objected to by the Examine						
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
11) The proposed drawing correction filed on is: a) approved b) disapproved by the Examiner.						
If approved, corrected drawings are required in reply to this Office action. 12)☐ The oath or declaration is objected to by the Examiner.						
Priority under 35 U.S.C. §§ 119 and 120	diffile.					
	n nriority under 25 U.C.C) C 440(=) (d) == (f)				
13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of:						
1.☐ Certified copies of the priority documents have been received.						
 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage 						
application from the International Bu * See the attached detailed Office action for a list	ıreau (PCT Rule 17.2(a)).				
14) Acknowledgment is made of a claim for domest	ic priority under 35 U.S.	C. § 119(e) (to a provisional application).				
 a) ☐ The translation of the foreign language pro 15)☐ Acknowledgment is made of a claim for domest 	ovisional application has	been received.				
Attachment(s)	p undoi 00 0.0.	33 120 GHG/OF 12 1.				
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2	5) Notice	w Summary (PTO-413) Paper No(s) of Informal Patent Application (PTO-152)				

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DETAILED ACTION

1. This action is in response to the application filed 2/2/1999.

2. Claims 1-30 have been examined and are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basic in claim 17 for "the virtual machine".

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-12 and 27 are rejected under 35 U.S.C. 102(e) as being unpatentable by Yellin U.S Patent No. 5,761,513.

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As to claim 1, Yellin discloses managing exceptions throwable during execution of methods in one or more classes by a machine (line 66 column 1 to line 28 column 2), each method (each method, line 13 column 3) including an exception handler array defining exception handlers associated with the method (the code for the exception handlers, line 14-15 column 3), combining the exception handler arrays for two or more methods into a single exception handler table (one table of exception handlers for all the methods in a class, lines 16-18 column 3).

As to claim 2, Yellin further teaches combining all exception handler arrays for all methods in a class in the single exception handler table (one table of exception handlers for all the methods in a class, lines 16-18 column 3).

As to claim 3, Yellin further teaches combining all exception handler arrays for all methods in all classes in the single exception handler table (lines 19-40 column 3).

As to claim 4, Yellin further teaches combining all exception handler arrays for all methods in a Java package (the methods in a Java class file, line 20 column 3 and Fig. 4) in the single exception handler table (one table of exception handlers for all the methods in a class, lines 16-18 column 3).

As to claim 5, Yellin further teaches a method is included in a class file (the methods in a Java class file, line 20 column 3 and Fig. 4); combining the exception handler arrays for all methods in a class file in the single exception handler table (one table of exception handlers for all the methods in a class, lines 16-18 column 3).

As to claim 6, Yellin further teaches searching the exception handler table (found in a tree search, lines 42-44 column 3) when an exception is thrown (an exception is

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thrown, line 41 column 3) while executing one of the methods (while executing the protected code block, line 65 column 3) including locating a first matching exception in the single exception handler table (the enclosing exception handlers that is applicable to the thrown exception, lines 42-44 column 3).

As to claim 7, Yellin further teaches retrieving in order exception handler entries (first exception handler found, line 42 column 3) from the exception handler table and checking the type and range of each exception handler (class rank is determined by position, lines 49-50 column 3) for the first matching exception handler.

As to claim 8, Yellin further teaches stopping searching if a current exception handler does not match and is the last handler for the top most level of protected code in an associated method (lines 19-47 column 7).

As to claim 9, Yellin further teaches the class files are Java class files (Java class file, line 20 column 3).

As to claim 10, Yellin further teaches the methods in one or more classes are grouped in a package (Java class file, line 20 column 3) where the package includes a package data structure including first and second portions (Fig. 2), the process including storing the exception handler table in the first portion (ThreadDeath to NoSuchMethodError, Fig. 2) of the package and all methods in the second portion (thrownable, error and exception, Fig. 122) of the package.

As to claim 11, Yellin further teaches concatenating the exception handler arrays (hierarchy shown in Figs. 2-3) including loading each exception handler array into the

first portion (ThreadDeath to NoSuchMethodError, Fig. 2) of the package data structure in accordance with a predefined ordering (class rank, line 49 column 3).

As to claim 12, Yellin further teaches the predefined ordering is determined based on the ordering of methods (class rank, line 49 column 3).

As to the system of claim 27, note the discussions of claims 1 and 2 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 5. Claims 13-16, 25-26 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yellin in view of Levy U.S Patent No. 6,092,147.

As to claim 13, Yellin further discloses the machine is a virtual machine (lines 11-57 column 3). However, Yellin does not teach a resource-constrained device. Levy teaches implementing a virtual machine on a resource-constrained device (Fig. 1). It would have been obvious to apply the teachings of Levy to the system of Yellin because this provides a reduction in the overall memory size and an increase in the overall processing speed of the virtual machine as disclosed by Levy (lines 33-55 column 2).

As to claim 14, Levy further teaches the resource constrained device is a smart card (smart card, line 7 column 3).

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As to claim 15, note the discussion of claim 10.

As to claim 16, note the discussions of claims 2 and 10.

As to the method of claim 25, note the discussions of claims 1 and 10-12 above.

As to the process of claim 26, note the discussions of claims 1, 6 and 13 above.

As to the system of claim 29, note the discussions of claims 1 and 10-12 above.

As to the system of claim 30, note the discussions of claims 1, 5-6 and 13 above.

6. Claims 17-19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yellin in view of Bak U.S Patent No. 6,009,517.

As to claim 17, note the discussions of claims 1 and 6 above. However, Yellin as modified does not discloses a return pointer. Bak discloses a stack with frames wherein each frame includes a return pointer (line 52 column 2 to line 41 column 3). It would have been obvious to apply the teachings of Bak to the system of Yellin as modified because this allows exceptions propagate through the execution stack for handling by the appropriate exception handler, even when the functions were written in different languages and the format of the exceptions are different as disclosed by Bak (lines 52 column 2 to line 7 column 3).

As to claim 18, Bak further discloses the pointer is a direct pointer to the exception handler information (lines 55-66 column 2).

As to claim 19, note the discussion of claim 9 above.

As to the system of claim 28, note the discussion of claim 17 above.

7. Claims 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yellin in view of Levy, and further in view of Bak.

As to claim 20, note the discussion of claim 13 above.

As to claim 21, note the discussions of claims 2 and 13 above.

As to claim 22, note the discussion of claim 14 above.

As to claim 23, Yellin as modified further discloses registering the package in a registry service at installation (line 11 column 3 to line 9 column 4), the registry service maintaining a pointer indicating a location of the combined exception handler table (lines 41-57 column 3), and a range defining a range of addresses at which methods are located (lines 9-18 column 3).

As to claim 24, Yellin as modified further discloses locating a package associated with a currently executing method including comparing an address at which an exception was thrown against the range for each package registered in the registry service (line 58 column 3 to line 9 column 4), searching the combined exception handler table associated with a located package (lines 41-57 column 3).

Conclusion

Please refer to the references listed on the attached PTO-892, which are not relied upon in the claim rejections detailed above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to The T. Ho whose telephone number is 703-306-5540. A voice mail service is also available for this number. The examiner can normally be reached on Monday – Thursday, 8:30 am – 6:00 pm, and every other Friday from 8:30 am – 5:00 pm.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C 20231

Or fax to:

- AFTER-FINAL faxes must be signed and sent to (703) 746 7238
- OFFICAL faxes must be signed and sent to (703) 746 7239
- NON OFFICAL faxes should not be signed, please send to (703) 746 7240

t.h September 24, 2002

> ST. JOHN COURTENAY III PRIMARY EXAMINER

Attachment for PTO-948 (Rev. 03/01, or earlier) 6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the Notice of Allowability. Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson. MUST be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings MUST be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.